

Green Energy and Brownfields

Developing a Healthy Green Power Market for Illinois

May 14, 2003



Pioneering *markets . . .*
to improve the *environment.*

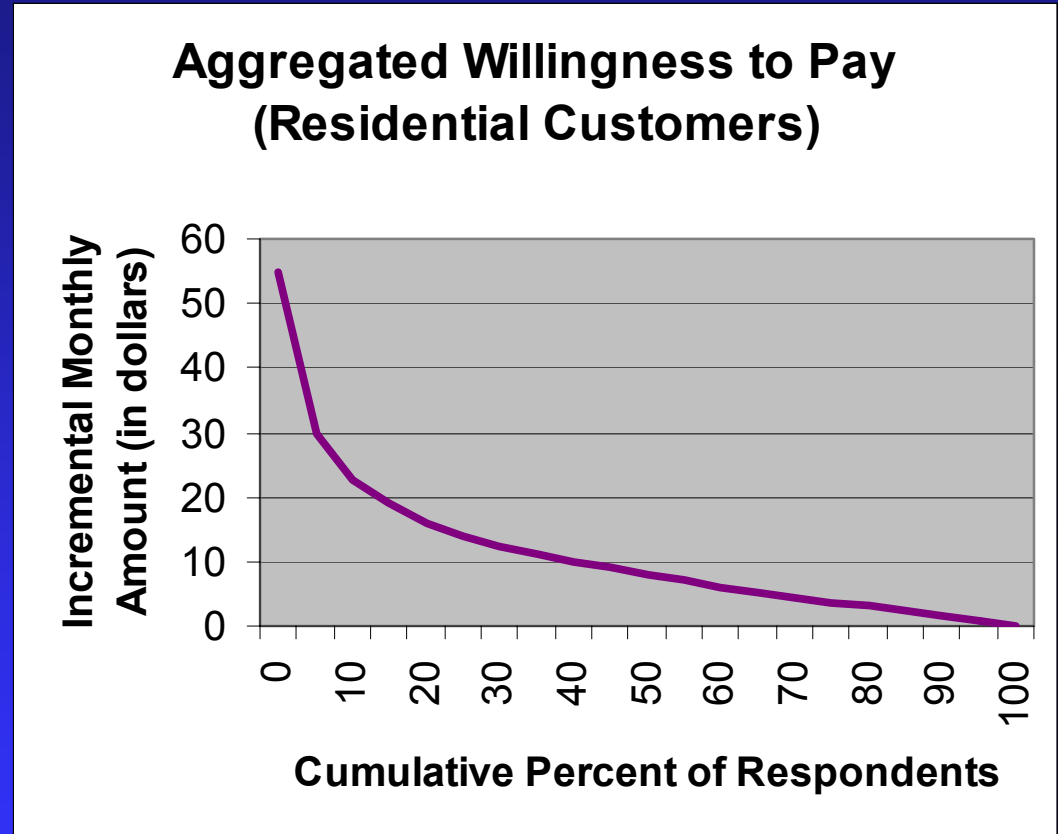
Alden Hathaway
Director, Green Power Programs
Environmental Resources Trust, Inc.
Phone: 202.785.8577
www.ert.net

Agenda

- EcoPower[®] Review
 - Green Power Market – EcoPower[®] Certificates
 - New Wind Power – Bureau County, Illinois,
 - New Solar (Zero Energy Solar Homes – Chicago)
 - Environmental Report
 - New EcoPower[®] Retail Channels (Green Power Marketing Opportunities)
 - EPA's Green Power Partnership

Renewable Energy Nationwide

- 40% of Residential US electricity consumers are willing to pay \$10 (10%) more per month for power from renewable resources.



Source: Farhar, B. (1999)

Reprinted by NREL "Forecasting the Growth of Green Power Markets in the United States," October 2001

Consumers Pressure Businesses to Go Green

Well-informed consumers are emerging as a new force in the global struggle to create an environmentally sustainable world, reports a new study by the Worldwatch Institute, a Washington, DC-based environmental and social policy research organization. Aided by labeling programs, standards and an expanding

Vital Signs 2002, produced by the support of the United Nations Programme (UNEP) and Jones Foundation, documents instances where consumer by information-brokering org seeking out goods and promote sustainable develop
"Consumers will not save themselves, but they are we a struggle where we are go the help we can get," says Executive Director of UNEP
Vital Signs 2002 high

Green Power is Making the Press!

The Connecticut



PRESS RELEASE

Lowe's Leads Industry

With Green Power Partnership in the Southeast

Lowe's Home Improvement Warehouse is the first home improvement retailer to join the Environmental Protection Agency's Green Power Partnership, a new voluntary program aimed at reducing the environmental impact of electricity generation.

"Buying green power is part of Lowe's continued environmental stewardship," said Robin Nickles, vice president of retail facilities management for Lowe's. "We're proud to lead the industry in this effort to make wise decisions about electricity and improve regional air and water quality. We hope other companies will do the same."

Green power is energy generated from renewable resources such as wind, solar and methane gas from landfill and

Exelon, CEI will bring wind power to D.C.

With a giant wind turbine blade as the backdrop, Exelon, the U.S. Environmental Protection Agency, the U.S. Department of Energy, and wind energy marketer Community Energy (CEI) joined

Power Marketing Conference, also held in Washington D.C.

The Mountaineer Wind Energy Center, in Tucker County, West Virginia, will be the largest wind power project east of the Mississippi River when it goes online in December.

sity, and National Geographic Society announced ground-breaking purchases of wind energy from local electricity provider, Washington Gas Energy Services (WGES). WGES, a subsidiary of Washington D.C.-based Washington Gas and Electric, agreed

Golden, Colorado 80401-3993, (303) 275-4090, e-mail: public_affairs@nrel.gov, web site: www.nrel.gov.

its Green Tags at environmental org comes from new re reinvests its net rev facilities, including "We see tremen SAPC and BEF," customers who s similar organiz

Schott Buys Green Tags

Schott Applied Power Corporation (SAPC) recently announced its purchase

Green Controversy

Who should have "green tag" ownership under power purchase agreements: buyers or the sellers?

By Paul N. Belval and Mary F. I

The Source

Number
01-00-0009



MegaWatt Hours
5
Certificates

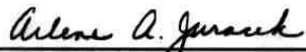
EcoPowerSM Certificates from ComEd

This certifies that **Alden Hathaway**

Is the owner of **5 MWh of EcoPowerSM Certificates**

Energy Resource(s): **Landfill + Gas to Energy**

Date of Issuance: **August 11, 2001**


Arlene A. Juracek
Vice President
Regulatory and Strategic Services

ComEd[®]
An Exelon Company

C0000010

©2001 COMED - COLUMBIAN ENERGY FINANCIAL

EcoPower® Certificates

- EcoPower® certificates represent the environmental attributes of a renewable energy resource;
- Certificates can be purchased in specified blocks (MWH) and combined with commodity power to produce clean power;
- The certificate price represents the premium buyers are willing to pay for environmentally friendlier power;
- Renewable Certificates provide liquidity to the market both for buyers and sellers of renewable energy;
- Renewable Certificates are the catalyst for a market-based clean power program

EcoPower® Certificates

Protect Market Integrity with Tracking & Post-Sale Substantiation.

- Financial Integrity
 - The electricity purchased was actually generated & placed on the grid
 - The green attributes purchased were sold only once to the holder of the Green Certificate
- Environmental Integrity
 - The electricity was produced by specifically identified, renewable resources
 - The environmental benefits (avoided emissions) of the electricity are real

Chicago Purchasing Green Power



City of Chicago purchasing over 65,000 MWh of LFGTE;

ERT is able to mix in Solar and Wind – Orders from City:

16,000 (MWhs) Wind

Chicago Mayor Richard Daley receives a ceremonial EcoPower® 600 (MWhs) Solar Certificate from Commonwealth Edison CEO John Rowe.

No. Illinois Wind Plant Under Construction

**Crescent Ridge, Bureau
County**

51 MW of Wind Power

**Consisting of thirty-four 1.5
MW Wind Turbines**

(like the ones shown here on
Backbone Mountain, WV)

**Enough Power for 18,000
Illinois households**



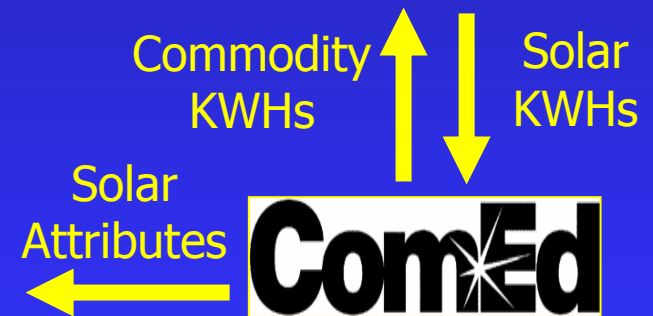
Crescent Ridge, IL Wind Plant

- Mid-April: Ruling by Judge Allows Construction to begin;
- Mid – July: Turbines standing on Construction Site in time for Summer Green Power Event;
- Mid – Fall: Plant begins Generating Power (enough for 18,000 Illinois households);
- Mid – Fall: 16,000 MWHs of Wind Certificates to be delivered to Chicago



EPA Green Power Partners Utilizing Solar

- Solar Certificates - City of Chicago Solar Homes



Solar Certificates Provide Additional Funding for Solar Generators & Help Partners Meet Green Power Commitments

100 Zero Energy Solar Homes

Lawndale Community

DOE Grant to ERT to Convene Group of Manufacturers

- 1st Meeting of Manufacturers by mid - June
- Construction to Start on 10 Homes by July, 2003
in time for Green Power Event
- 100 Homes built by October, 2004 – providing 250+
MWH of Solar and Possible Hydrogen Powered
Electricity
- Manufacturers/Suppliers buy Green Power

ERT Environmental Impact Report

- New ERT Environmental Impact Report proves that renewable energy backs down fossil fuel plants rather than nuclear or hydro;
- Renewable energy displaces high quantity of emissions under ERT Dispatch Ranking Protocol as compared to “System Mix” (2300 lbs per MWh vs. 815 lbs per MWh for “System Mix”)

New ERT Environmental Report



ANNUAL ECOPOWER® ENVIRONMENTAL REPORT FOR THE CITY OF CHICAGO FOR 2002

21 February 2003



331 Elliott Drive, White River Junction, Vermont 05001

EcoPower® Environmental Report,
21 February 2003

Resource Systems Group, Inc.
page 1

Table 1: Annual EcoPower® Environmental Report for City of Chicago

	Sources of EcoPower							Total All Sources ¹
	Bio gas ¹	Bio mass ²	Wind ³	Solar Direct ⁴	Geo- thermal ⁵	Tidal/ Wave ⁶	Small Hydro ⁷	
EcoPower Generated (MWh) ⁸	01,051	-	-	0	0	0	0	01,051
EcoPower Sold (MWh) ⁹	01,051	-	-	0	0	0	0	01,051
Estimated Air Emissions Savings from Generation of EcoPower ¹⁰								
	Bio gas ¹	Bio mass ²	Wind ³	Solar Direct ⁴	Geo- thermal ⁵	Tidal/ Wave ⁶	Small Hydro ⁷	Total All Sources ⁸
Greenhouse Gases (lb CO ₂ -equivalent) ¹¹	10,510,000	-	-	0	0	0	0	10,510,000
Criteria Air Pollutants (lb) ¹²								
Sulfur dioxide ¹³	634.99	-	-	0	0	0	0	634.99
Nitrogen dioxide ¹⁴	60,263	-	-	0	0	0	0	60,263
Particulate matter (Total) ¹⁵	10,226	-	-	0	0	0	0	10,226
Visible Organic Compounds ¹⁶	4,119	-	-	0	0	0	0	4,119
Toxic Air Pollutants (pounds) (lb) ¹⁷								
1, 2-Dichloroethane ¹⁸	0.0001	-	-	0	0	0	0	0.0001
Arsenic ¹⁹	1.25	-	-	0	0	0	0	1.25
Barium ²⁰	21.17	-	-	0	0	0	0	21.17
Cadmium ²¹	0.39	-	-	0	0	0	0	0.39
Chromium ²²	3.01	-	-	0	0	0	0	3.01
Cyanide ²³	69.75	-	-	0	0	0	0	69.75
Dioxin and Furans ²⁴	0.00004	-	-	0	0	0	0	0.00004
Formaldehyde ²⁵	7.62	-	-	0	0	0	0	7.62
Lead ²⁶	2.67	-	-	0	0	0	0	2.67
Mercury ²⁷	7.08	-	-	0	0	0	0	7.08
Nickel ²⁸	8.21	-	-	0	0	0	0	8.21
Polycyclic Organic Matter ²⁹	0.08	-	-	0	0	0	0	0.08
Zinc ³⁰	1.13	-	-	0	0	0	0	1.13
Additional greenhouse gas equivalents (Equivalent CO ₂ equivalent) ³¹	1,189	0	0	0	0	0	0	1,189

¹ Indicates a biomass pollutant. ¹⁸ Indicates a toxic air pollutant.



No. Illinois Fossil Plants Shut Down

Midwest Plants To Be Idled in Illinois Next Year

LCG, Dec. 4, 2002--Plants owned by Midwest Generation, a unit of Edison International's Edison Mission Energy, will be partially shut down during 2003, removing about 1,400 megawatts from the market, according to a company spokesman.

Collins Plant 2 Units -
550 MW ea. Natural Gas

Will County Plant -
620 MW Coal Unit

EcoPower® Retail Channels

Two Retail Energy Suppliers Signed for EcoPower® Certificate Sales

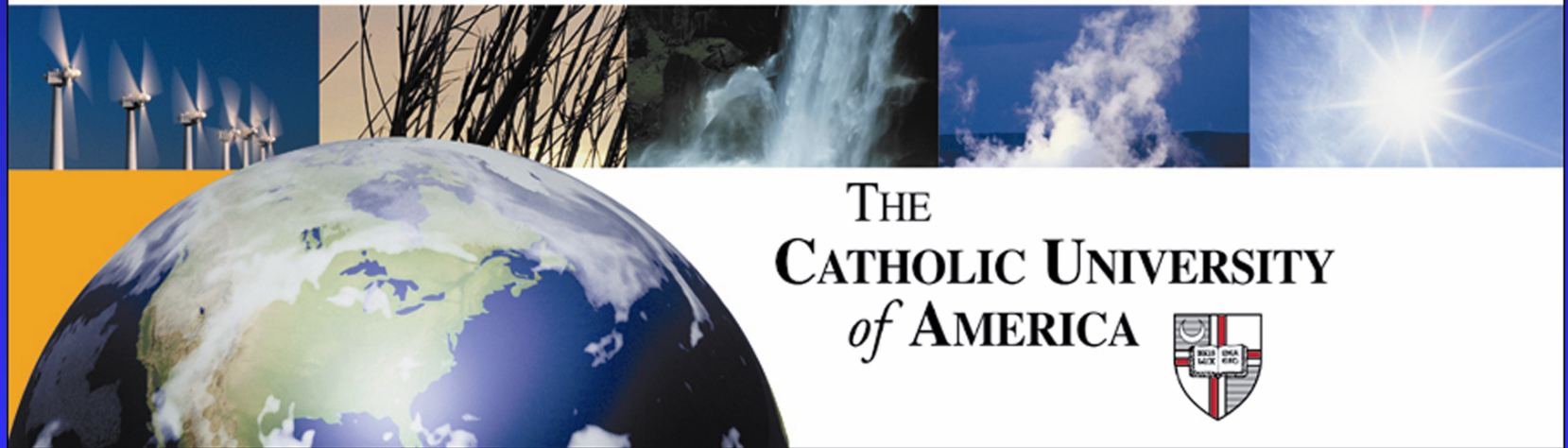
- Constellation New Energy – Signed, June 2002
- Peoples Energy – Signed, February, 2003
- Sterling Planet – Signed, August, 2001

USEPA Green Power Partnership



**EPA congratulates CATHOLIC UNIVERSITY –
for using wind power for 12% of its electricity needs**
– the largest percentage of wind power purchased by any U.S. university.

WELCOME TO THE GREEN POWER PARTNERSHIP!



EPA has signed 120+ Partners for Green Power - including at least ten organizations w/ major operations in Illinois



www.epa.gov/greenpower

Green Power
Partnership



United States
Environmental Protection Agency

[Site Map](#) | [Contact Us](#)

Green Power Partnership

[Home](#)

[What's New](#)

[What Is
Green Power?](#)

[Green Power
Market](#)

[Join the
Partnership](#)

[Leading the
Way @ EPA](#)

[Green Power
Resources](#)

[Founding
Partners](#)

Innovation by Nature

*The Next
Step
Toward
a Cleaner,
Brighter
Future*



► [What's New](#)

► [Founding Partners](#)

EPA's Green Power Partnership is a new voluntary program designed to reduce the environmental impact of electricity generation by promoting renewable energy. The Partnership will demonstrate the advantages of choosing renewable energy, provide objective and current information about the green power market, and reduce the transaction costs of acquiring green power.

Commercial, nonprofit, and public organizations can become Partners by committing to procure an amount of renewable energy that is proportional to their electricity needs.



Questions?



Alden Hathaway
Director, Green Power Programs
Environmental Resources Trust,
Inc.

Phone: 202.785.8577

www.ert.net